



502-A

# 502-A GAS THYRATRON

NEGATIVE-CONTROL TETRODE TYPE WITH METAL SHELL

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

	Min.	Av.	Max.	
Voltage. . . . .	5.7	6.3	7	ac or dc volts
Current at 6.3 volts . . . . .	-	0.6	0.66	amp

Cathode:

Minimum heating time			
prior to tube conduction . . . . .	10		sec

Direct Interelectrode Capacitances:

Grid No.1 to anode . . . . .	0.2		$\mu\text{f}$
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Grid No.1 to cathode & shell, grid			
No.2, and heater . . . . .	2.5		$\mu\text{f}$

Ionization Time (Approx.) . . . . .	0.5		$\mu\text{sec}$
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Deionization Time (Approx.):

For conditions: dc anode ma = 100, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -250 . . . . .	10		$\mu\text{sec}$
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For conditions: dc anode ma = 100, grid-No.1-circuit resistor (ohms) = 1000, and dc grid-No.1 supply volts = -15 . . . . .	150		$\mu\text{sec}$
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Maximum Critical Grid-No.1 Current:

For conditions: anode volts (rms) = 460, and dc grid-No.1 volts ad- justed to cutoff . . . . .	2		$\mu\text{amp}$
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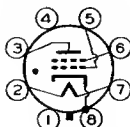
Anode Voltage Drop . . . . .	8		volts
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### Mechanical:

Mounting Position . . . . .	Any
Maximum Overall Length . . . . .	2-5/8"
Seated Length. . . . .	1-31/32" $\pm$ 3/32"
Maximum Diameter . . . . .	1-5/16"
Weight (Approx.) . . . . .	2 oz
Bulb . . . . .	Metal Shell MT8G
Base . . . . .	Small-Wafer Octal 8-Pin (JETEC No.88-21)

BOTTOM VIEW

- Pin 1 - No Connec-  
tion  
Pin 2 - Heater  
Pin 3 - Anode  
Pin 4 - No Connec-  
tion



- Pin 5 - Grid No.1  
Pin 6 - Grid No.2  
Pin 7 - Heater  
Pin 8 - Cathode,  
Shell

## RELAY and GRID-CONTROLLED RECTIFIER SERVICE

Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:

Forward. . . . .	180 max.	650 max.	volts
Inverse. . . . .	360 max.	1300 max.	volts

← Indicates a change.

MAY 1, 1955

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## GRID-No.2 (SHIELD-GRID)

## VOLTAGE:

Peak, before tube			
conduction . . . . .	-100 max.	-100 max.	volts
Average <sup>■</sup> , during tube			
conduction . . . . .	-5 max.	-5 max.	volts

## GRID-No.1 (CONTROL-GRID)

## VOLTAGE:

Peak, before tube			
conduction . . . . .	-250 max.	-250 max.	volts
Average <sup>■</sup> , during tube			
conduction . . . . .	-10 max.	-10 max.	volts

## CATHODE CURRENT:

Peak . . . . .	1.0 max.	1.0 max.	amp
Average <sup>●</sup> . . . . .	0.2 max.	0.1 max.	amp
Fault, for duration of			
0.1 second max. . . . .	10 max.	10 max.	amp

## GRID-No.2 CURRENT:

Average <sup>■</sup> . . . . .	+0.01 max.	+0.01 max.	amp
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## GRID-No.1 CURRENT:

Average <sup>■</sup> . . . . .	+0.01 max.	+0.01 max.	amp
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## PEAK HEATER-CATHODE VOLTAGE:

Heater negative with			
respect to cathode . . .	100 max.	100 max.	volts
Heater positive with			
respect to cathode . . .	25 max.	25 max.	volts

AMBIENT-TEMPERATURE RANGE. .	-55 to +90	-55 to +90	°C
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■ Averaged over 1 cycle.

● Averaged over any interval of 30 seconds maximum.

*For Dimensional Outline, see GENERAL SECTION*

MAY 1, 1955

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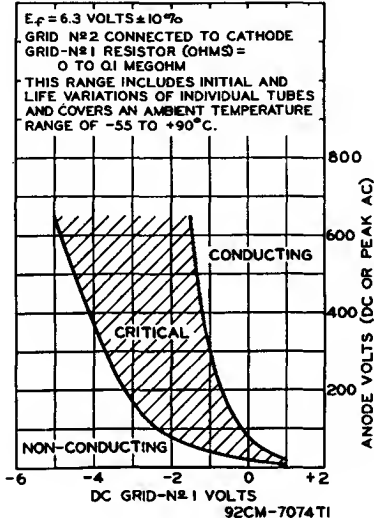


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# GAS THYRATRON

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## OPERATIONAL RANGE OF CRITICAL GRID-N<sub>2</sub>1 VOLTAGE



MAY 1, 1955

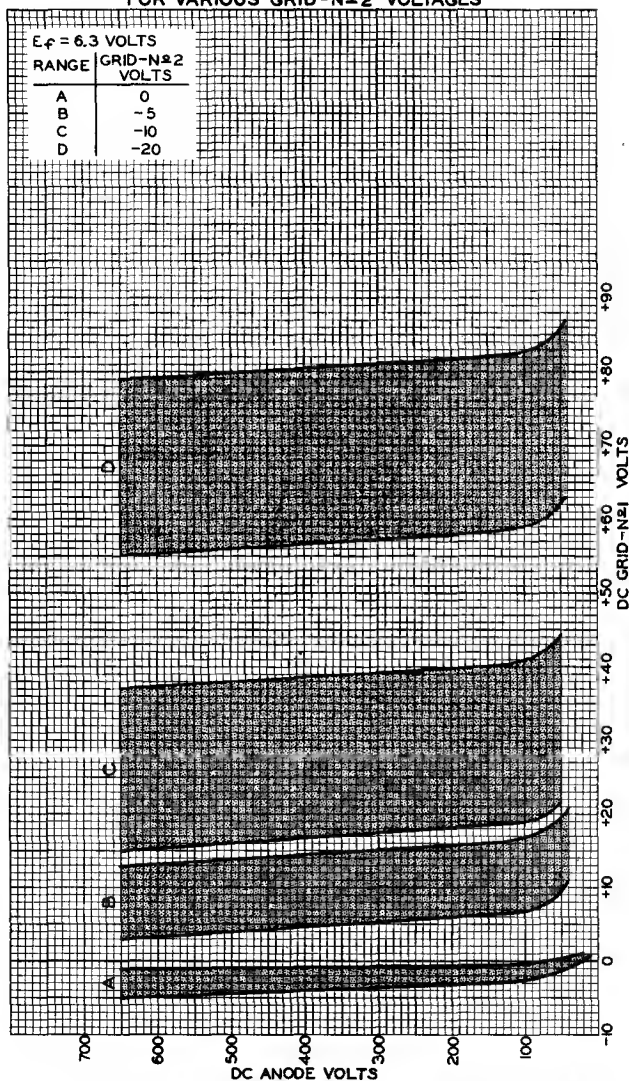
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CE-7074T1

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# 502-A OPERATIONAL RANGES OF CRITICAL GRID-N<sub>2</sub>1 VOLTAGE FOR VARIOUS GRID-N<sub>2</sub>2 VOLTAGES



APRIL 26, 1955

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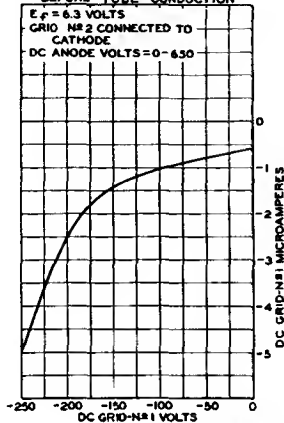
92CM-8607



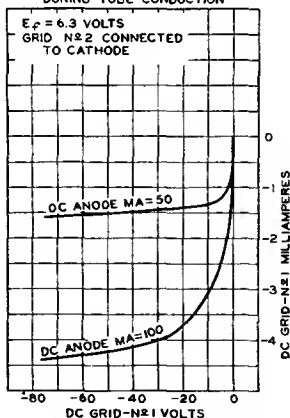
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## CHARACTERISTIC CURVES

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MAXIMUM GRID-N<sub>2</sub>1  
CHARACTERISTIC  
BEFORE TUBE CONDUCTION

92CS-8610T

AVERAGE GRID-N<sub>2</sub>1  
CHARACTERISTICS  
DURING TUBE CONDUCTION

92CM-7072T1

MAY 1, 1955

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